BIOS

Alberta Society of Professional Biologists • June 2002

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2002 Kananaskis G8 Summit

The G8 Summit Management Office has completed a strategic environmental assessment which identifies the scope and nature of environmental issues related to the event.

According to the Strategic Environmental Assessment the Kananaskis Summit can be undertaken in an environmentally responsible manner and describes the measures and precautions taken by the G8 Summit Office and G8 Summit Security to preserve and protect the Kananaskis environment.

Positive effects are expected in the form of economic spinoffs in the region, and enhanced opportunities for wildlife movement and research through the Kananaskis Summit Environmental Legacy. The full report can be viewed at http://www.g8.gc.ca/envirosea-e.asp. A final report will be released after the Summit.

> "the Kananaskis Summit can be undertaken in an environmentally responsible manner."

The G8 Leaders, accompanied by a small number of delegates, will be accommodated in the Kananaskis Village. The RCMP, with assistance from Department of National Defence (DND), will be responsible for protecting international leaders. Much of the combined RCMP and DND security force will be based in existing frontcountry campgrounds and areas previously subject to development. Backcountry camps will be occupied only for short periods of time. The Kananaskis Summit operations will occupy less than 5% of Kananaskis Country, and the effects will be compressed to the shortest possible time frame.

A Director of Environmental Affairs, Dr. Bruce F. Leeson, ensures that environmental protection and stewardship are addressed at all levels. A Green Meetings program encourages Summit staff and partners to practice sound environmental stewardship by: reducing waste; recycling materials; reducing the use of water, fuel and electricity; limiting the consumption of paper, packaging and disposable products; and selecting eco-certified products and encouraging service and products providers to do likewise.

An Envirosafe training program for all staff with duties in the backcountry emphasizes both personal safety and the importance of paying due attention to environmental impact during deployment.

Environmental Issues in Kananaskis

Wildlife concern is directed towards disturbance of species sensitive in time or space, plus five sensitive species, which may pose potentially aggressive conflict with people.

- Sensitive, but not aggressive species, likely to be in the mid-Kananaskis Valley

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BIOS is written for the enjoyment of the members of the Alberta Society of Professional Biologists and those interested in the field of professional biology. Articles or comments are welcomed and should be communicated to the ASPB Office. Editing and layout by Gavin More, 49 NORTH Creative Learning and Training.

WELCOME NEW MEMBERS

Regular: Julie Anne Budgen, Ruth Lynn Dicks, Beth Dickson, Rod Drummond, Karen Halwas, Craig Harris, Jennifer Hemsing, Shelley Lundvall, Ricardo Moreno O., Paula Oberg, Sharon Pappin Willianen, Darin Quintilio, Richard Salter, Ivan Stefano

Biologist In Training: Edward Jones, Erin Klassen, Kristen Kumpula, Margaret Marra, Michael Sanderman

Student: Ray Tyler

Membership Update

ASPB membership as of June 15, 2002: **Total 481**

Regular	393	Biologist in Training	37	Inactive	32
Student	6	Retired	4	Honorary	6
Scholarship	2	Public Member	1		

2001 ASPB Conference Proceedings

The Cumulative Environmental Effects Management Proceedings are now available through the Alberta Society of Professional Biologists office. The cost of the 487 page soft cover book is $40.00 which includes postage and handling within Canada. If you would like a copy of the book please contact the office at 780-434-5765 or by email at aala@aala.ab.ca with your address and form of payment. Payment must be received prior to shipping.

2003 ASPB Conference

The Alberta Society of Professional Biologists is currently organizing a conference for March 2003 that will focus on acess management issues. If you would like further information, please contact the ASPB at 1-800-711-5765 or email pbiol@aspb.ab.ca

Telemetry Equipment for Sale

Applied Ecosystem Management has a telemetry receiver for sale.
For details contact:

Don Albright, P.Biol., R.P.Bio.
Applied Ecosystem Management Ltd.
Phone: (780) 831-7331 FAX: (780) 831-7337
E-mail: D.Albright@aemltd.ca

BIOS BITS

2002 Alberta Order of the Bighorn Award Recipients

Dave Powell's (Lacombe) - involvement with conservation began in 1973, with the St. Paul Fish and Game Association. He served as president and conservation education instructor. Later, Dave joined the Lacombe Fish and Game Association, also serving as president. Under his leadership, the club's revenues increased greatly and it purchased 450 acres of land for conservation. Dave's achievements include spearheading the development of three fisheries access sites and several park construction sites.

He has taught conservation education to more than 5,500 students and volunteered one week each summer for the past 12 years to teach at a conservation education camp. He has also taught the Canadian Firearms Safety course to hundreds of students. A founding board member of the Alberta Conservation Association, Dave is a board member of the WISE Foundation and vice-chair of the Hunting for Tomorrow Foundation.

Edgar and Jeanne Jones (Edmonton) - Edgar T. Jones is a television and film producer and photographer whose images of wildlife have contributed to numerous TV programs and publications. Edgar obtained his bird banding permit in 1940, was a founding member of the Edmonton Bird Club in 1948, and also co-founded and was president of the Alberta Wildlife Foundation. Jeanne and Edgar have banded more than 100,000 banded under his permit. They purchased a 228-acre property at Hastings Lake and sold it to the province at below market value to be used as a wildlife sanctuary - the Edgar T. Jones Natural Area. In 2001, Edgar received the Order of Canada for his outstanding contributions to promote wildlife conservation.

Murray Mackay (Ponoka) - has spent countless hours improving fish and wildlife habitat in the Ponoka area. With assistance from local groups, he has built and sold nest boxes for many different types of birds, using the proceeds for habitat projects. He and his wife are very involved in seeing that injured birds are released to the wild. They have driven thousands of km picking up injured birds from Fish and Wildlife offices and delivering them to rehabilitation facilities. Murray also gives

presentations on raptors, accompanied by a great horned owl that is unfit for release. Murray was also chair of the local Ducks Unlimited committee and a board member of the Red Deer River Naturalists.

Norman Rodseth (Edson) - has more than 40 years of experience with fish and wildlife conservation in Alberta, including opportunities presented through his long career with the Alberta Forest Service. Norm joined Trout Unlimited in Edmonton in 1987 and was director until 1992. He has also been vice-president of the Alberta Council of Trout Unlimited since the council was formed.

He is a Conservation Education Program instructor as well, teaching fly tying, fly fishing and rod building. His contributions include fish stocking and numerous fish habitat projects, building and maintaining campsites and recreation facilities, carrying out prescribed burns to improve habitat, providing input to the Tri-Creeks fisheries program, Alberta's integrated management plans and Luscar's coal mine reclamation proposals, and serving on advisory committees with the Foothills Model Forest and the Alberta Conservation Association.

Bill Turnbull (Calgary) - has long been involved in protecting Alberta's natural resources. He is a past director of Upland Game Birds of Alberta, has been a trustee for the Calgary Zoological Society, and has worked closely with Conservation International and Ducks Unlimited. His contributions with Ducks Unlimited include developing habitat initiatives such as the Eastern Irrigation District Co-op Venture Agreement and the Bow River Irrigation District Agreement, and adopting the North American Waterfowl Management Plan.

Through his work on the board of Conservation International, Bill direct-

Waterloo Co-op Works

The University of Waterloo launched co-operative education in Canada. Co-operative education is a post-secondary program that integrates classroom studies with paid, productive, real-life work experience in a related field. Students get the best of both worlds - a high quality academic degree and an impressive résumé of practical work experience. Companies gain intelligent, highly motivated employees who are willing to learn and eager to contribute to the company.

For more information about co-operative education, or to begin hiring co-op students, visit www. cecs.uwaterlo.ca or contact:Debbie Goer, Western Canada Co-op Coordinator (403) 286-4984 Fax: (403) or dgoer@uwaterloo.ca

Bios Bits

ed major financial support toward many educational and wildlife interpretative projects in the province. As a landowner, he helped pioneer the introduction of conservation easements to help protect critical wildlife habitat.

Bow River Irrigation District (Vauxhall) - has been committed to conserving and developing Alberta's wetlands for many years. In 1985, it reached an important agreement with Ducks Unlimited to have that organization manage and improve more than 15,000 acres of wetland habitat in drought-prone southeastern Alberta. Ducks Unlimited currently manages more than 13,500 acres of wetlands and 102,000 acres of native prairie uplands in the district. Twenty-seven projects with over 140 basins, 550 km of shoreline and 14,000 acres have a secure future - as does the wildlife that depends on this habitat.

The Bow River Irrigation District agreement represents a high point in co-operation between southern Alberta farmers and wildlife managers. Through the agreement, wetland resources are managed in a way that benefits agriculture and wildlife at the same time.

Andy Russell (Waterton Park) - is one of Alberta's most well known authors and conservationists. Many remember him for a series of radio vignettes he wrote and narrated, called "Our Alberta Heritage" - about the province's rich history and its colorful characters. He grew up in the Rockies near Pincher Creek, and has been a mountain guide, trapper, photographer, cinematographer, author and broadcaster, as well as a champion of Alberta's natural heritage for most of his life.

Andy has produced three feature-length films, published 12 books and written numerous articles. His honours include the Order of Canada and the J. B. Harkin Conservation Award. Three Alberta universities have presented him with honorary law degrees for his conservation efforts. A long-time advocate of grizzly bears, he has helped Albertans develop a greater appreciation of the need to protect them.

2002 Alberta Emerald Award Recipients

Corporate/Institutional Leadership

Dr. Luigi Morgantini of Weyerhaeuser Company Limited has been dedicated to researching and mitigating the impact of human activity on wildlife and biodiversity for more than 25 years. As Weyerhaeuser's resident wildlife biologist, he uses his expertise to make numerous systemic improvements to the way wildlife habitat needs are integrated into the company's forest management activities. Dr. Morgantini has conducted multiple studies on the impact of land use activities on wildlife ecology and behaviour, and played an active role in ensuring those findings are integrated into resource management plans. He has also published several technical reports on topics such as elk ecology, the impact of logging on wildlife, and vegetation response to prescribed burning, timber harvest and herbicides. An adjunct professor at the University of Alberta, he teaches a popular course on assessing and mitigating the impact of human activities on wildlife.

Community Group

The Wagner Natural Area Society formed 1982 to help protect a half-section of crown land known as the Wagner Natural Area. In 1986, Wagner Society became its official steward. In Wagner, calcium-rich springs bubble to the surface to create amber-coloured marl ponds and patterned, open sedge fens nestled between hummocky forests of spruce and tamarack. The diversity of mosses, flowering plants (including 16 species of wild orchid) and insect life these peatlands support is legendary, attracting the general public, school and community groups, post-secondary students and research scientists. Over the years the site has been expanded by government purchase of contiguous land until it now stands at 534 acres.

Alberta Environmental Laws Cost Offenders $1.5 Million

The province's Compliance Assessment and Enforcement Activities Annual Report: April 1, 2000 to March 31, 2001, summarizes compliance assessment and enforcement activities authorized under more than 20 pieces of legislation including the Environmental Protection and Enhancement Act, the Forest and Prairie Protection Act, the Water Act, and the Wildlife Act.

In 2000-01, the Government of Alberta conducted more than 81,000 environmental inspections, reviews and audits. As a result of these various inspections and reviews, the province laid 5,833 charges, assessed 164 administrative penalties, and issued 245 environmental protection or enforcement orders and 2,175 written warnings. This resulted in court penalties with fines of $1.1 million and almost $400,000 in administrative penalty assessments, financial penalties assessed by the department.

Copies of the report can be obtained from Alberta Environment's Information Centre in Edmonton at (780) 422-2079, toll free 310-0000 or www3.gov.ab.ca/env/protenf/publications/EnforcementActivitiesReport00_01.pdf

Kananaskis Summit continued

during May and June, 2002, include: nesting harlequin ducks, Columbia spotted frog, water vole, and long-toed salamanders. The locations of these wildlife species have been identified and plans have been formed to avoid their known and probable sites of occurrence.

- Wolves and coyotes, although unlikely to be aggressive towards people, deserve special mention. Care will be taken in the conduct of the G8 Summit not to create any circumstances liable to lead to the habituation of wolves. Also, should any wolves be known to den in or close to the security zone in the spring of 2002, a protective no-go buffer area will be established around their den site. Because coyotes have similar traits, these methods will apply to coyotes as well.
- Potentially dangerous encounters arise with grizzly and black bears, cougars, female elk with calves and female moose with calves.
- Air traffic will be directed to stay away from the alpine ranges of bighorn sheep and Rocky Mountain goats.

Vegetation, terrain and soil disturbance is minimal, as activities will mostly occur on previously disturbed or already hardened surfaces.

- No new parking lots or roadways will be required or created. Minimum impact camping techniques will be used, e.g. no open fires; no digging or burying; frequent tent relocation; and a pack in/pack out policy, including solid body waste. It is possible vegetation and surface soil damage could occur at a small number of front-country sites where heavy equipment will be positioned off the edge of roadways. A reclamation team will immediately attend to any soil or vegetation disturbance upon removal of the equipment.
- A combination of special measures, standard operating procedures and best management practices will be employed to set-up, operate and decommission camps and equipment.
- PWGSC will conduct pre- and post-occupation inventories of DND sites to ensure any disturbances caused by the occupation are recorded and attended to upon closure of the G8 Summit. DND have prepared environmental screenings for the siting and operation of their camps, using environmental protection procedures long established by their organization. Control of hazardous products and spill response contingencies are highlighted in all of these undertakings.

A state-of-the-art fibre optic communication cable was installed to provide pulse code modulation service for a G8 Summit and will remain in place.

- Localized terrain and soil disturbance arose from the installation of the fibre optic cable. A reclamation program to restore this impact, prepared by Telus Corporation, will begin early in the summer of 2002. Special attention will be paid to arrest the spread of knapweed which was noticed along the route during planning for this project.
- Other temporary communication services installed to provide security and logistical needs during the Summit will be removed following the closure of the meetings.

The existing electrical supply will be augmented at select sites with temporary independent electrical power generating capability.

The existing solid waste collection and disposal infrastructure will be augmented with additional temporary capacity to avoid overload of the current system. Waste product reduction, recycling and composting has set a goal to divert 80% of the waste product away from conventional landfill wastage.

Existing potable water supplies are adequate for the anticipated G8 needs, without upgrade other than for security of water quality.

Most of the waste water treatment will be accommodated by operating the existing infrastructure within its design capacity.

- Waste water produced beyond this amount will be treated by "hold and haul" to approved treatment facilities.

Energy for heating and cooking will be provided via the current infrastructure at existing fixed roof facilities.

- Temporary DND camps will be self-contained with portable energy supplies, e.g. electrical generators and bottled propane.

Protection of Aboriginal religious, cultural and spiritual interests will be accomplished by a committee of Stoney Nakoda elders.

- Elders will meet with and orally share knowledge of these sites with the Director of Environmental Affairs who will then examine all G8 plans to ensure no trespass or harm comes to these sites.

Archaeological sites locations in the Kananaskis Valley have been researched. None of these sites will be impacted by G8 Summit activities.

Air quality is potentially affected by the operation of internal combustion motors and camp cooking facilities for DND and RCMP.

Kananaskis Summit Environmental Legacy

- build a wildlife-crossing structure near Canmore, allowing animals to move more freely between vital habitat in Banff National Park and Kananaskis Country; and
- establish a Wildlife Ecology Chair at the University of Calgary to focus research attention on wildlife issues in Kananaskis and on the eastern slopes of the Rocky Mountains

Kananaskis Summit continued

- The contribution of these air particulates is likely to be modestly more than what would occur if the Valley was being occupied by tourists and recreationists in the June holiday time.

Aesthetic and visual resources are widespread and rich in the Kananaskis Valley. The G8 Summit will not disturb or detract from this exceptional visual treasure.

Wildfire is a point of special concern in view of the dry condition of K-Country in recent years and the concern for a heightened possibility of accidental or intentional ignition of forest fire. The Government of Canada has provided resources for Alberta Forest Protection to formulate and enact a thorough wildfire detection and rapid attack capability before and during the time of the G8 Summit.

Hazardous natural circumstances are common and widespread in Kananaskis Valley. A program of instruction, called Envirosafe, provides training to staff who have duties where there is potential to encounter these circumstances. Staff will be educated and properly equipped to secure their personal safety from lightning, hypothermia, tree fall, rock fall, wood ticks, surface water organisms, disorientation and aggressive wildlife as they go about their duties. Animal whereabouts and species specific behavioural signals which may precede a defensive or aggressive encounter are presented in order for staff to avoid conflict and to reduce stress for wildlife. Similarly, staff will be instructed regarding individual and collective measures of personal behaviour to ensure their presence and activities respect the natural environment and achieve minimal impact. Special measures such as pack in/pack out of all materials including solid body waste, no open fire, minimum impact camping, foot travel, control of smoking materials and no-go zones will be employed.

Socioeconomic issues range from concern about the topics of discussion of the G8 Leaders to local public safety and inconvenience, including potential impact on the natural environment of Kananaskis Country. The economic impact is anticipated to be positive, with estimates of more than $193.1 million in economic benefits for the Calgary region and $243.5 million for the province (the text of the pre-Summit economic impact report see www.tourismcalgary.com/ccvb/pdfs/G8eistudy_english.pdf).

Mitigation Approaches

The main environmental issue arising from holding the G8 Summit in Kananaskis is the possible adverse impact on certain elements of the natural environment. This depends on the plans to confine activities largely to existing hardened sites, e.g. roadways and parking lots, and to previously disturbed locations which can be restored. In these situations, best management practices and standard operating procedures will be employed. Similarly, procedures for the transportation, storage and handling of fuel products or other hazardous chemicals are well known. Measures to ensure compliance

Potential for Significant Adverse Effect

- The frequency (or repetitiveness) of the activity of the G8 Summit is limited. Although the meeting extends over only two days, the duration of preparations will proceed for about two weeks in the case of Kananaskis. Certain elements, such as preparing, occupying and dismantling the RCMP accommodation camp on the parking lots at Nakiska Ski area will be active for about eight weeks. The effects of the whole undertaking are short term.
- The anticipated scale of the effect is local to Kananaskis and is confined largely to the Evan Thomas Provincial Recreation Area, about 5% of Kananaskis Country.
- The timing of the Summit is sensitive in the case of Kananaskis. June is a time of birthing and rearing young animals, and the early growth of plants. These are sensitive times which have been identified by G8 planners. Extra effort and special measures and procedures are warranted to identify and avoid and minimize potential adverse effects.
- Risks are predictable and manageable with respect to planning, and conducting the known elements of the G8 Summit. Best management practices and standard operating procedures will respond satisfactorily to most of the environmental protection needs. Risks do arise in the spectrum of potential effects arising from a large gathering of people. An unprecedented security preparation will be put in place to minimize the occurrence and adverse results of such events. Similarly, preparations to rapidly suppress wildfire, and to contain and clean-up contaminants are thorough and extensive.
- Reversibility of the effects of holding the G8 Summit are high. Facilities will be returned to their former state and appearance (pursuant to contractual agreements) after the meeting is concluded because the service and space needs are temporary and easily removed. Evidence of the occurrence of the G8 Summit will quickly disappear. A small team will remain long enough to attend to any items of remediation which may be required.
- Cumulative effects are an important consideration in the G8 Summit undertaking. There are no other normal activities proceeding in the mid-Kananaskis Valley at the time of the G8 Summit on June 26 and 27, 2002. There are no known construction projects, new land uses, or unusual activities occurring in the Kananaskis Valley at the time of the G8 Summit. With the exception of the fibre-optic cable and the sewage lagoon liner, all other infrastructure modifications will be removed from the Kananaskis Valley upon closure of the G8 Summit.
- Residual environmental effects are expected to be non-existent or modest. Most of the environmental components of Kananaskis are not subject to any form of impact. Short-term effects to soil and groundcover will be addressed with standard reclamation techniques such as aerating compacted soils, raking and seeding damaged ground cover. These effects, which will be limited in size and occurrence, will be little noticed by the next growing season. The route of the fibre optic cable is by far the largest of these impacts; it will receive reclamation attention for several years, or until such time as satisfactory rehabilitation has been achieved. Damage resulting from accidents will be addressed similarly.

Kananaskis Summit continued

and to respond effectively to accidents are in place.

There will be impacts to vegetation and soils at specific sites where camps and duty posts are located, or where machinery and communication facilities are positioned off roadways. Each of these sites will be subject to an environmental protection plan, an environmental screening, set-up and tear-down supervision, and follow-up monitoring to ensure no significant adverse effects are residual.

The key wildlife components of concern are grizzly and black bears, cow moose with calves, cow elk with calves, cougars, bighorn sheep ewes with lambs, Rocky Mountain goat nannies with kids and harlequin ducks. There will be no measurable effect for all other wildlife species.

The wildlife species of concern have specific time and place sensitivities. The main source of stress acting on the sensitive wildlife species identified above is the presence of security forces moving along trails, and at existing and temporary campsites. Surprise encounters with bears or cow moose and elk with young can result in direct contact conflict. Helicopter activity is a source of concern for Rocky Mountain goats and bighorn sheep accompanied with young of the year as kids and lambs can fall or be injured when fleeing in precipitous terrain. Smells of food, garbage or other attractants potentially lure bears into close contact with humans where they can become habituated and subject to conflict. Nesting failure or predation could result if harlequin hens are repeatedly flushed from their nests.

With the mitigation measures to be employed, bighorn sheep, Rocky Mountain goats, elk, moose, cougars, black bears and harlequin ducks will be unaffected. G8 staff will be trained to avoid conflict with these species, and how to deal with such circumstances, should they inadvertently arise. Operational plans have been prepared to avoid sensitive times and spaces, e.g. patrols will stay back 10 metres from the edge of streams potentially occupied by nesting harlequin hens, and helicopters will have a minimum stand-off distance from goat and sheep ranges.

Grizzly bears will receive special attention. No net negative impact is anticipated for grizzly bears as a result of the G8 Summit. The SMO has contributed to the continuation of Alberta Environment's East Slopes grizzly research project. This will allow for location determination of the collared bears during the time of G8 activity and quick response plans to avoid grizzly bears. Alberta Conservation officers, experienced in the management of bears, will be on duty to quickly deal with any bear situations. Also, Karelian bear dogs will be present to move off bears which may be inclined to investigate sites of human occupation too closely. The Karelian bear dogs are specially bred and trained for managing bears (details about Karelian bear dogs can be seen at: www.bear-dogs.org). They are used in a program called "bear shepherding" combined with conditioning-an exercise of repeatedly harassing a bear to move it away from a location or activity when it displays evidence of becoming accustomed to the presence of people or habituated to foods associated with people. Consequently, there is likely to be a neutral to positive effect for grizzly bears. The information gathered will be applicable to Alberta's grizzly management strategies in Kananaskis for years to come.

The SMO has established the goal of having no adverse effects on the environment of Kananaskis Country, and the mid-Kananaskis Valley in particular. The Director of Environmental Affairs directed the collection and analysis of information and knowledge pertinent to understanding the sensitive environmental situations. This information has been used to avoid and mitigate impacts on the environment. It is predicted residual impacts are not likely to have significant adverse effects because any damages will have been repaired and reclaimed.

Risks and uncertainties have been minimized by a comprehensive risk assessment which evaluates possible occurrences and prepares to neutralize undesirable outcomes. All possible eventualities, including accidents and acts by others have been considered, with response plans for environmental protection and/or clean-up prepared.

Each director within the G8 program has received guidance regarding their responsibility to employ environmental stewardship measures in the planning and execution of their duties. This includes contractors and service providers.

Environmental condition inventories of each site will be performed before and after occupation, with a follow-up program to attend to any site reclamation needs.

For projects which trigger the CEAA, environmental screenings will be prepared. In most instances, these contain strategic security information and will not be available for public review prior to the holding of the G8 Summit. Those screenings which are available will be listed on the G8 Web site: www.g8.gc.ca.

Final Reporting

A report documenting the environmental protection preparations undertaken before, during and after the 2002 G8 Summit will be prepared. The description of the experiences, observations and results of the undertakings to protect the environment of Kananaskis and Calgary during the conduct of the June 2002 G8 Summit will be a major international contribution to others who in the future may be tasked with similar decisions and duties.

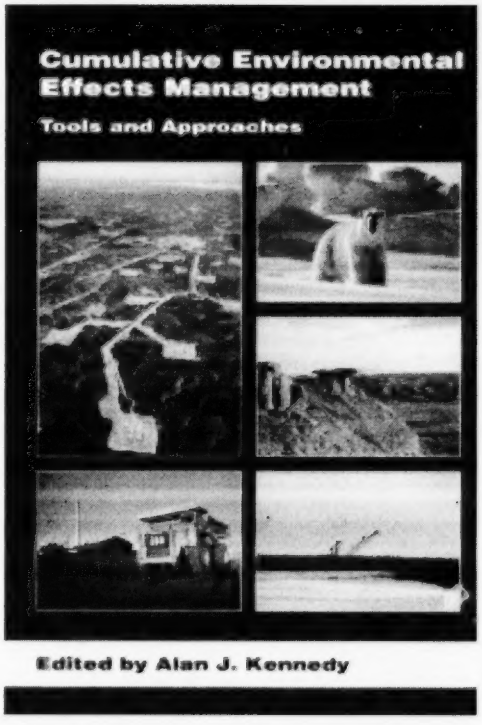
Source: G8 Website Press Releases and Strategic Environmental Assessment. June 2002.

BOOK REVIEW - Cumulative Environmental Effects Management

Almost 20 months after the Alberta Society of Professional Biologists hosted CEEM 2000, the symposium proceedings *Cumulative Environmental Effects Management : Tools and Approaches* have now been published. The purpose of the symposium was to provide clear and practical solutions to managers and practitioners to assist them in meeting the challenges of managing cumulative environmental effects. The symposium was highly successful because of the caliber of the presentations, the discussions that ensued, and the information that was exchanged among participants.

Divided into four parts, Part One describes the perspectives of practitioners with topics varying from the emerging implications resulting from recent regulatory reviews to species specific cases. A strong emphasis on legal aspects is contained in this section. Part Two highlights several developing management approaches particularly emphasizing a variety of regional approaches. Part Three includes descriptions of a number of methodologies and tools used by practitioners in recent years. These come from a wide variety of ecosystems and specializations. Part Four provides a number of detailed case studies covering a broad selection of projects and wide geographic area.

The cost of the 487 page soft cover book is $40.00 which includes postage and handling within Canada. If you would like a copy of the book please contact the office at 780-434-5765 or by email at aala@aala.ab.ca with your address and payment. Payment must be received prior to shipping.



Science Fair Winners

Edmonton Regional Science Fair

The winners of the ASPB Award for 2002 are Alyssa Smith and Kaitlyn Wolfert of Barrhead Elementary for their project entitled "Fish Can Learn". Honourable mentions went to Noelle Byer of Holy Cross for "Personality Links" and Natasha Posthuma and Meagan Sachs of Faith Lutheran for "Copper Goes Nuts for Nuts".

The Edmonton Regional Science Fair Council is interested in recruiting members for next year. If you are interested contact Kimberley Chung at science@telusplanet.net or 780-432-6591.

Calgary Youth Science Fair

The winner of the ASPB Award for 2002 is Qaseem Jiwani of Rundle Colleges for his project entitled "Bacteria and Natural Substance".